

CLAIMS

It is claimed:

5

1. A *Medicago sativa* or cultivated alfalfa seed deposited as ATCC Accession Number XXXXX.

10 2. A *Medicago sativa* hybrid or cultivated alfalfa plant derived from seed deposited as ATCC Accession Number XXXXX.

3. Pollen from the plant of claim 2.

15 4. An ovule from the plant of claim 2.

5. A method of producing alfalfa seeds having at least 75% hybridity comprising the steps of :

(a) crossing by controlled pollination cytoplasmic male sterile alfalfa plants with maintainer line alfalfa plants to produce cytoplasmic male sterile hybrid plants;
20 (b) selectively harvesting seed from the cytoplasmic male sterile hybrid plants of step (a);

(c) crossing male sterile hybrid alfalfa plants by male fertile alfalfa plants by allowing pollination of plants grown from the seed of step (b) and seed from at least one variety of male fertile alfalfa plants, the male sterile seed and male fertile seed
25 planted at a ratio of about 4:1; and

(d) non-selectively recovering the seeds from the pollinated alfalfa plants of step (c).

30 6. The method of claim 5, further comprising the step of determining the hybridity of the progeny of the crossing.

7. The method of claim 6, wherein the step of determining the hybridity is accomplished employs a genetic or morphological marker.

8. The method of claim 6, wherein the step of determining the hybridity is accomplished by amplified fragment length polymorphism analysis.

5 9. The method of claim 5, wherein the average seed yield of step (d) is at least 80% of the average seed yield obtainable by crossing the male fertile plant of step (c).

10. Alfalfa seed having at least 75% hybridity produced according to the method of claim 5.